

F11ZZFP

NAG Parallel Library Routine Document

Note: before using this routine, please read the Users' Note for your implementation to check for implementation-dependent details. You are advised to enclose any calls to NAG Parallel Library routines between calls to Z01AAFP and Z01ABFP.

Note: you should read the the F11 Chapter Introduction before using this routine.

1 Description

F11ZZFP releases the memory resources allocated internally to store auxiliary information about a sparse matrix A . The memory resources to be released must have been allocated by a prior call to one of the set-up routines F11ZBFP, F11ZPPF, F11ZGFP, F11ZUFP, F11DFFP and F11DTFP, with LIA = -1.

Note: F11ZZFP will delete the auxiliary information about A and so should be called only when this information is no longer needed.

2 Specification

```
SUBROUTINE F11ZZFP(ICNTXT, IAINFO, IFAIL)
  INTEGER          ICNTXT, IAINFO(*), IFAIL
```

3 Usage

3.1 Definitions

None.

3.2 Global and Local Arguments

The following global **input** arguments must have the same value on entry to the routine on each processor and the global **output** arguments will have the same value on exit from the routine on each processor:

Global input arguments: IFAIL

Global output arguments: IFAIL

The remaining arguments are local.

3.3 Distribution Strategy

Not applicable.

3.4 Related Routines

None.

3.5 Requisites

One of the set-up routines listed in Section 1 must have been called with LIA = -1 before calling F11ZZFP.

4 Arguments

- 1: ICNTXT — INTEGER *Local Input*
On entry: the Library context, usually returned by a call to the Library Grid initialisation routine Z01AAFP.

Note: the value of ICNTXT **must not** be changed.

2: IAINFO(*) — INTEGER array *Local Input/Local Output*

Note: the dimension of the array IAINFO must be at least $\max(200, \text{IAINFO}(2))$.

On entry: the first IAINFO(2) elements of IAINFO contain auxiliary information about the matrix A , including information about the internally allocated memory resources. The array IAINFO must have been initialised by a prior call to one of the set-up routines listed in Section 1, with LIA = -1. The first IAINFO(2) elements of IAINFO **must not** be changed between successive calls to library routines involving the matrix A .

On exit: The information in the array IAINFO is changed to reflect the release of internally allocated memory resources.

Note: after successful completion of F11ZZFP, IAINFO cannot be used as input argument to any library routine unless it is re-initialised by a call to one of the set-up routines listed in Section 1.

3: IFAIL — INTEGER *Global Input/Global Output*

The NAG Parallel Library provides a mechanism, via the routine Z02EAFP, to reduce the amount of parameter validation performed by this routine. For a full description refer to the Z02 Chapter Introduction.

On entry: IFAIL must be set to 0, -1 or 1. For users not familiar with this argument (described in the Essential Introduction) the recommended values are:

IFAIL = 0, if multigridding is **not** employed;
IFAIL = -1, if multigridding is employed.

On exit: IFAIL = 0 (or -9999 if reduced error checking is enabled) unless the routine detects an error (see Section 5).

5 Errors and Warnings

If on entry IFAIL = 0 or -1, explanatory error messages are output from the root processor (or processor {0,0} when the root processor is not available) on the current error message unit (as defined by X04AAF).

5.1 Full Error Checking Mode Only

IFAIL = -2000

The routine has been called with an invalid value of ICNTXT on one or more processors.

IFAIL = -1000

The logical processor grid and library mechanism (Library Grid) have not been correctly defined, see Z01AAFP.

IFAIL = - i

On entry, the i th argument was invalid. This error occurred either because a global argument did not have the same value on all logical processors, or because its value on one or more processors was incorrect. An explanatory message distinguishes between these two cases.

5.2 Any Error Checking Mode

IFAIL = 1

IAINFO was not initialised by a prior call to one of the set-up routines listed in Section 1.

IFAIL = 2

The prior call to a set-up routine did not allocate any internal memory resources because the argument LIA was not set to -1.

6 Further Comments

None.

7 References

None.

8 Example

See Section 8 of the document for F11DSFP.
